DOCUMENT RESUME

ED 041 614 PS 002 851

AUTHOR Haupt, Dorothy
TITLE Developing Cognitive Learnings with Young Children.
PUB DATE 14 Nov 69
NOTE 19p.; Paper presented at the meeting of the National Association for the Education of Young Children, Salt Lake City, Utah, Nov. 14, 1969

EDRS PRICE EDRS Price MF-$0.25 HC-$1.05
DESCRIPTORS *Cognitive Measurement, *Lower Class, *Middle Class, Negro Youth, Preschool Children, *Racial Differences, *Sex Differences, Student Teacher Relationship, Verbal Ability
IDENTIFIERS Object Categorization Test, Picture Categorization Test

ABSTRACT

This preliminary study explores (1) the relationship between children's behavioral responses to cognitive tasks in a testing situation and in a nursery school environment, and (2) the relationship of the above responses to sex, race, and class differences. Studies by Sigel investigating the classification behavior of preschool children, and by Hertzig, investigating the responses of middle and lower class children to verbal and performance tests, influenced the focus of the present study. Subjects were 30 4-year-old male and female children of different racial and socio-economic backgrounds. Observations were made of the individual child pre- and posttesting situations, which used the Sigel object and picture categorization tests and a motor encoding task. Teacher reports assessed children's responses in nursery school. A tentative conclusion is that boys attend less to the specifics of a task demand than do girls. Low income black children and low income white males showed a greater number of breakaway and non-work responses during the picture categorization task than did the other children. Low income children changed their responses to task demands during the period from pre- to Posttesting by showing increased attention and verbalization. (NH)

National Association for the Education of Young Children
Salt Lake City, Utah

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

D. Haupt
11-14-69

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DEVELOPING COGNITIVE LEARNINGS WITH YOUNG CHILDREN

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At this point in time, near the end of a decade of the COGNITIVE I want to raise two relatively naive questions:

1. What more do we as nursery school teachers need to know about cognitive development in young children?

2. What do we want to know about cognitive development in young children?

One very likely response to both these questions is - "Nothing - I've had it up to here with cognitive development" - a neat case of "cognitive indigestion."

Another response may be that what we need has been supplied to us over the years and particularly in recent years but what we want to know now is how to encourage cognitive development and how to measure the effectiveness of this input in terms of children's increased abilities to cope with problems. In other words, "So now we know - what do we do about it?"

The variations in responses from a group of nursery school teachers to the questions raised would no doubt be important if for no other reason than that they would illustrate both our recognition of the accumulation of knowledge about this aspect of children's growth and development and our frustration with the gaps between knowing and doing - the theoretical versus the practical.

This morning I want to give you an initial report on an investigation of a certain set of factors which were assumed to be related to children. learning how to learn. In discussing this, I shall describe briefly the

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design of the recently completed study and its underlying assumptions: the previously reported research studies which stimulated our thinking; some of the more relevant findings; and finally the implications of the findings for nurturing and enhancing cognitive learnings with young children in nursery schools.

The study carried out at Merrill-Palmer in 1968-69 was designed to explore two sets of relationships: 1) the relationship between children's behavioral responses to a series of cognitive task demands in a testing situation and their behavioral responses to cognitive task demands inherent in a planned intellectually stimulating nursery school environment; 2) the relationship between sex, race, and class differences and children's behavioral responses to cognitive task demands in both the testing and nursery school setting. The majority underlying assumption being:

1) That individual differences in style of responsiveness to cognitive demands not only exist but persist unless modified through teacher intervention.

   For example: a child may characteristically exhibit non-work behavior when faced with a task. He may become passive and withdrawn; he may explode and threaten the adult; he may attempt to divert the demander by engaging him in conversation or manipulate him to be the one being tested; he may be a "doer" not a "sayer."

2) The closer the match initially between child and teacher the more likely the child will be to attempt to meet cognitive task demands.

   For example: While Bill may work well with quick sketchily stated verbal demands from the teacher, Jim may be immobilized by such an approach and exhibit non-work behavior.

Let me pause here to say that the word "demand" causes a hang-up with some nursery school teachers. My assumption is that we all make demands on children - we vary markedly in our ways of indicating these but no matter how skillful we are in disguising them - both we and the children know that they are being made - our gestures - our eyes - our sometime marvelous hearing or becoming conveniently deaf - convey these as well as do our voice and words.

3) That the child's style of response can be modified through experiences which help him to attend to detail, to discriminate, to explore different ways of solving problems, etc.

4) That while inter and intra individual and group experiences in style of response to cognitive demands will be present among children from different racial and economic backgrounds, middle-income children will exhibit more work responses to verbal demands than to non-verbal performance demands; the opposite differences will predominate among low-income children.

The data were to be obtained from observations of the individual child pre and post testing situations and from teacher reports (pre and post) on each child in certain situations in the nursery school setting.

I want to turn now to the research studies mentioned earlier and indicate their contribution to our thinking.

Since 1964 Dr. Irving Sigel and his associates at Merrill-Palmer have been interested in assessing classification behavior of preschool children. For this, they have constructed two tasks: The Object Categorization Test and the Picture Categorization Test. Some 500 black and white, middle and lower-class children have been given these tests.

For those of you who are not familiar with Dr. Sigel's work in this area the two tasks employ the same twelve objects (a box of crayons, pipe, spoon, ball, notebook, book of matches, 4 small blocks, cup, cigarette, pencil, top, and bottle opener). One task (the object task) contains three-dimensional objects while the other task (the picture task) is made up of full-sized colored photographs of these same objects.

Each of the 12 pictures serves as a cue card. The child is asked to find a picture or pictures from the remaining 11 pictures spread out before him that is the same, alike, or belongs to the cue card. When the child has made his choice or choices, he is asked to tell why that picture is like, the same as, belongs or goes with the cue card. For example:

Dawn is given the picture of a yellow cup. She chooses the pictures of the white spoon and the cigarette.

Probe:Why are these things alike?

Dawn: "Well, you use the spoon to stir the coffee in the cup and you sit and smoke a cigarette. That's that."

Jim is given the picture of the cup.

He chooses the yellow pencil.

Jim: 'Cause they's both yellow.' (They are.)

The same procedure is used with the object categorization task.

Gail is given the notebook.

She selects the pencil and crayon from the 11 objects before her.

Gail: You write in the book with this (pencil) and she does; You write (sort of) with this crayon (and she proceeds to do so).

While not attempting to trace the development of Dr. Sigel's research design from study to extending study, some of his findings along the way are important to mention. For example, in 1966 it was found that lower-class

black children had greater difficulty classifying pictures than objects; and further, they used different types of categories for each condition. This was in contrast to the middle-class children, who did not exhibit significant differences in grouping of three-dimensional objects versus two-dimensional material (pictures).

In 1967, the investigations were extended to include the degree to which race, class, and sex differences might influence performance on the Object and Picture Categorization Tests. The lower-class black children were again found to have more difficulty categorizing pictures than objects. The middle-class group, white and black, did not show this discrepancy.

Subsequent studies concerned with the style of categorization employed, that is, the criteria children employ in organizing various types of stimuli, showed that lower-class black children have the most difficulty in performing representational tasks. (Dr. Sigel says, "Representational thought is required since it involved the ability to think in terms of images, words, or other representations of the object world. Further, representational thought is a critical cognitive process necessary for mastery of the symbolic world and is therefore presumed to be significant for educational success.")

As an aside, I wish Dr. Sigel had spelled out that last statement more clearly - if for no other reason than it can be interpreted to mean - that we have to pile up experiences on the representational side - especially for lower-class children. That having performed reasonably well on an object categorization task - lower-income children need little or no further experience with concrete objects.

One of the findings reported by Sigel in 1969, after an examination of the 500 protocols, was that for five-year-girls, which test comes first (picture or object) does influence performance on the subsequent task. More form responses (flat, long, round, straight, etc.) tend to be used when

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pictures rather than objects are presented first. He speculates why girls are so different from boys in this respect - asking if the style response of the girls is so influenced by pictures because they are more oriented toward representational stimuli, or if this is a reflection of their verbal facility, their greater maturity level, or whatever.

For the past three years, Sigel and his associates have been involved in training programs with children. It was found that training did influence quality and quantity of children's styles of categorization although the discrepancy in ability to categorize objects and pictures remained.

As interesting and important as these findings are to those of us who work with young children from different racial and socio-economic backgrounds, it was Dr. Sigel's observations about nursery school programs and his subsequent training programs for teachers that proved to be most provocative to me. I wanted to know something more specific about the relationship between the young child's level of cognitive function and programs which focus on such processes as discrimination and attention to details. I needed to know more about the relationship between children's ability to meet the demands of tasks we set for them and their level of cognitive functioning.

Insofar as I could determine, one of the key factors in Dr. Sigel's training programs for teachers was that it focused on cognitive demands. That is, the techniques of asking questions, steering discussions, clarifying and demonstrating were designed to elicit thinking about an object or a picture; it's color, shape, function, it's attributes. This approach involves both the teacher and child in the teaching-learning situation. The teacher listened (as contrasted to always answering questions); helped the child to recall his past experiences; to summarize. While accepting of a child's contributions, she did not confuse the issue so to speak by introducing extraneous ideas.

From our discussions with Dr. Sigel and Mrs. Olmsted it became apparent that we needed to examine very carefully a study by Margaret Hertzig and her associates as reported in a 1968 SRCD Monograph, Class and Ethnic Differences in the Responsiveness of Preschool Children to Cognitive Demands.

In brief, this study of 116 middle-class children (58 boys and 58 girls) and 60 working class Puerto Rican children (27 boys and 33 girls) between the ages of 3 years 1 month, and 3 years 8 months, demonstrated clearly that the two groups differed from each other in the behavioral styles with which they responded to demands for cognitive functioning.

For my purposes today, I want to cite only a few of the stylistic differences which were attributed to characteristics of different social groupings and not as artifacts of IQ or of differences in birth order.

For example, middle-class children characteristically responded to demands for cognitive functioning by making a greater proportion of work responses than the working-class Puerto Rican children.

The most pervasive difference between the two groups was the tendency of the middle-class children to respond to the cognitive demands by verbalizations much more frequently than by action or gesture. This tendency is in striking contrast to the tendency of the Puerto Rican children to use passive and silent unresponsiveness very frequently.

"In addition to differences in the overall amount of verbalization, differences existed in the kinds of verbalizations made when the children failed to work. In the middle-class group, the largest single kind of expression of not-work responses was an ability-related rationalization." I don't know how to do it yet," "I am too little to do it" or "I haven't learned that yet." In contrast, the most frequent of the verbal not-work responses in the Puerto Rican children was irrelevant substitution such as, "I want my mommy," "I want to go home," "I want to play with the toys," or, "I want a drink of water."

It was noted also that there was a greater tendency for the middle-class children to make spontaneous verbal extensions. For example, "I have blocks like this at home," or "My mommy sews with a thimble."

One of the more significant findings in terms of what I wanted to know more about and what the earlier work of Sigel had not made as clear was that middle-class children made work responses with equal frequency when confronted with either a verbal or performance demand.

The Puerto Rican children characteristically made work responses more frequently to tasks requiring performance than to tasks requiring verbal responses.

In the fall of 1968 our Preschool Services enrolled 36 four-year-old children. Eighteen children, equally divided by sex, race, and socio-economic backgrounds, were placed in Group I; 18 children representing these differences were placed in Group II. The research design for the two groups included testing on Sigel's two categorization tests and a section of a Motor Encoding Test.

In light of Hertzig's findings obtained from observations of child behavior and recording of their verbalizations in the course of their performance on the Stanford-Binet, the structure of the Sigel tests appeared to offer more opportunities to assess intra and inter individual and group differences in the responses to these task demands. In addition, I made the assumption that whatever changes occurred in the children's responses to cognitive task demands between the pre- and post-testing periods could be related to their experiences in the nursery school setting.

The method of data collection was one of observing the testing situation for each individual from an observation booth overlooking a small room. The Examiner, a member of Dr. Sigel's research team, approached the child in the nursery school room and together they came into the testing

room. Another observer and I began recording from the moment of contact in the nursery school room to the child's return to the nursery school. For the majority of the session I used a tape recorder, attempting to describe fully what the child did and said in meeting the task demands; at the same time the other observer, using her own brand of shorthand, recorded as much as she could on these same behaviors. As you may well guess, we spent much time in the nursery school observation booths prior to the administration of the tests in attempting to catch and record examples of children's non-verbal responses to teachers. We alternated between ourselves the job of recording by voice or pencil.

Before reporting to you on some of the findings of the present investigation and discussing the implications of these as I see them for nurturing learning in all of our children, I want to clarify the limitations of the data.

For example, I made no attempt to score the test performances of the children on any of the tests. Any comparison of a child's performance from one test to another is focused on the similarities or differences in his behavior while attending to these tasks. When two children used <u>form</u> as the criteria for categorizing, the fact per se of their doing so is of less importance to me than is their manner of attending to the demands of the task and each child's approach to conveying his choice and reasoning. In the same vein, the content of the children's responses was important only to the extent that this offered clues to how they were reacting to the examiner and/or the situation per se. For example, Dawn's irritated voice and movements when offered a picture of a pipe made sense after her "You should know that" was paired with her earlier response to the picture of a cigarette. She had selected the pipe as "like or belonging with" the cigarette: why shouldn't he (the Examiner) know that later she would pair the cigarette as belonging to the pipe?

The Motor Encoding task requirement of "Show me," to a series of fifteen (15) pictures of familiar objects offered a balance to the heavier verbal performance requirements of the categorization tests. The content of the child's responses while less crucial for the present study than the manner in which they met this specific task demand was interesting nevertheless. For example, there was Gail's literalness. She refused to demonstrate (show) the use of the toothbrush and tooth paste because as she said to the tester, "It's yours." Russell's refusal to "show me" with the picture of cigarettes and matches because he said, "Smoking is bad for you. It makes you cough." Then there were Terry's responses of, "Put it in the locker," or, "Put it in the suitcase," to "Show me what you do with these."

Do you know what he is saying? Of course! He saw the Examiner taking the pictures out of his attache' case before the test began and to Terry - they were to go back into that case. "That's what you do with them!"

On the children enrolled in the two-four-year old groups, data were collected on 30 children (15F and 15M). Two low-income children and one middle-income child refused to participate in the pre-test series (2M + 1F): in the post-test series only the low-income male again refused. While participating in the series of tasks, two low-income black girls were described as practically untestable; two white males (one middle and one low-income child) fled the scene on the pre-categorization test after a limited number of tests. While there were 3 refusals on the pre-motor encoding tasks, the one refusal on the post testing was a different child. The sample is small and unfortunately two middle-income black boys were withdrawn from the nursery school at mid-year. I must ask you to recognize that I consider my study to be a preliminary one.

I want to call particular attention to what I have labeled as "breakaways" during the testing situations. In this category are included

such behaviors as the child involving the Examiner in conversation; getting up to investigate things in the testing room; taking over the task and testing the E.; leaving the scene. The largest number of these events occurred with the male subjects; two middle income white boys and 2 lower-income black boys contributing most heavily. Two lower-income black girls contributed the greater proportion of the "breakaways" found among the 15 females. The task contributing most heavily to the total number of these events was the picture categorization task; the fewest number occurred in the motor encoding tasks. Although the sharp increase in the number of breakaways occurring with the boys during the post-test session with the picture categorization task continues to tease me, it is of some interest to note that the middle-income white boys contributed markedly to this. One explanation may be that boys of this age (older fours and young fives) tend to respond to imposed tasks by taunting or teasing the adult; another explanation could be that for these particular children the difficulty was in the task per se and that their behaviors reflect feelings of inadequacy. My hunch, you will note thoughout this report appears to be real differences between males and females in their work responses to cognitive demands is that the behaviors of the low-income children reflected their increased comfortableness with adult authority figures. Put most simply - their nursery school experience had involved them actively in learning experiences and they were less inclined to be passive recipients. They didn't have to "take it" from the E.

During the pre and post sessions on all three tasks there were only three children who appeared to solicit the Examiner's assistance or approval. These behaviors were non-verbal in nature for the two girls (one middle-income black and one lower-income black girl) - that is, "checking the Examiner's reactions with their eyes"; one middle-income boy who played verbal games with the Examiner. This finding is of interest to me inasmuch as in an earlier study concerned with level of aspiration, both middle-class

boys and girls consistently demanded, through verbal and non-verbal means, marked evidence of adult support and approval.

In light of the Hertzig's findings related to the greater involvement of lower-income children with non-verbal action (as contrasted to verbalization) the current findings are of interest. While the vast majority of children responded to the "Show me" demand of the motor encoding tasks precisely, that is, with a non-verbal work performance, the 14 boys in the pre-test situation outdistanced the 14 girls on initial verbal responses 64 to 25, or nearly 3 to 1. The difference between the total number of such initial verbal response by the middle-class boys and the lower-income boys was not significant; the differences between middle-income black and white boys and low-income black and white children also were not significant. However, of the 25 initial verbal responses of the 14 girls, 22 occurred with the middle-income black girls.

The post-motor encoding session revealed the consistency of the greater number of initial verbal responses by the boys as compared to the girls. However, on the post-test, there was a marked interest in the number of verbal responses from the middle-income black boys and this style of response to the demand was reduced among the low-income white girls.

My conclusions, while tentative at this point, suggest that boys in general attend less to the specifics of a task demand than do girls. While the nature of the lower-income boys' non-verbal work responses were in general more dramatic than were the non-verbal behaviors of the girls as a whole, two middle-income boys were equally dramatic,if not more so. It was the middle-income white girls who showed a consistent pattern of responding precisely to the demands of the motor encoding tasks, with few extensions for elaborations. With the telephone pictures: They acted as if they were dialing, picked up the receiver, listened and then replaced the receiver. I shall not forget John who acted as if he put the arms of the stethoscope

in his ears, placed the receiver against his chest - was very, very quiet - beamed at the E. and said, "I am a healthy one! I never go to a doctor."

Taken as a whole, the data from the picture and object categorization tasks is skewed markedly in the direction of work responses from all of the children. While there are differences between children in all of the cells in relation to the need for probes to clarify their rationale for categorizing, I want to discuss more fully the data on lower-income black children and lower-income white males.

On the pre-pictures categorization task this group of children not only "broke away" more frequently and consistently from task demands, but there were a significantly greater number of both verbal and non-verbal non-work responses. These children, on the whole, used the word "nothing" or were passive or shook their heads "no" more frequently on the initial task demands and probes to follow than did the remainder of the children. In particular, the four-low-income black boys showed a marked increase in these responses as the tasks continued.

While the differences in the children's performances between the object categorization task and the picture categorization task is striking in terms of the need for probes to clarify the child's intent on the picture task, the data as presently analyzed do not make as clear a distinction between the performance of low-income black children and middle-income black and white children as do Sigel's analyses. The number of children in each cell is too small to permit any further generalization but examination of the data offers the opportunity to study intra group differences. Without doubt, the Sigel tasks offer us added insight into the highly individualized response styles of the children in our groups.

I want to turn now to the most puzzling aspect of the data from the present study. While the analysis has only begun and no attempt has yet been

made to do a detailed examination of changes for each child from pre to post testing, several changes in responses to task demands from the time of the pre test to the time of the post-test appear.

One of the most evident of these is the performance of the low-income children. They were not only attending more to the task demands but they were also talking more. The Examiner's use of significantly more probes suggests that while their verbal output had increased, they were having more difficulty conveying to the Examiner the basis for their choices. What seemed to this observer to be irrelevant comments were found to be highly relevant after their meaning had been clarified in response to the probes. Unlike the responses of the middle-income children after one or more probes for the clarification, the lower-income children as a whole continued to work and showed little observable evidence of irritation with the Examiner. Although two lower-income and two middle-income children took themselves out of the testing situation before the test was completed, it was the latter who dismissed the task with, "I've had it!"

As might be expected from Sigel's findings, the picture categorization test continued to produce more, "I don't know," "no responses," and substitutions than did the object categorization test for the lower-income children. The greatest change in responses to the task demands of the object categorization test as a matter of fact occurred with two middle-income black girls. Throughout the test their behaviors with the objects could be described only in terms of "couldn't care less." One wonders if they were less challenged by the dimensions of the task than the majority of the other children.

In all fairness to the nursery school teachers involved in the study I must take full responsibility for the limitations of the available data in this area. At a later time I hope to incorporate the detailed recorded observations of the children's activities in the nursery school but these data are somewhere between California and New York - hopefully by now in

Dr. Sigel's possession. For today I will draw on the material taken from my inadequately designed teacher forms and indicate the major problems encountered.

I am impressed by the teachers' awareness of individual children's styles of meeting task demands, particularly during the initial period of enrollment. However, as you may have anticipated, their descriptions of children's responses more nearly matched the data obtained from observations obtained from the testing situation of those children on either end of the work-non-work, verbal-non-verbal continuum. I believe that their marked tendency to comment on the children's needs for teacher aid or support reflects in large measure their role expectations. I speculate, too, that their tendency to report on the spontaneous verbal extensions of many of the children is a measure of their unconscious wish to present their children in the best possible light. The greatest discrepancy by far between the two sets of data is the extent to which the teachers do not use a probe or second demand. When these are reported to be used they occur in association with an initial non-work non-verbal response, or when a child refused verbally by saying, "I don't want to." While I am willing to attribute their complete failure to report the use of a second or third probe with children <u>to</u> their desire for not pressuring children, I believe that we need to examine this factor very closely. I would raise the question as to whether or not we are stopping short of helping certain children to continue working toward solutions of tasks. Our very understandable concerns about not <u>forcing</u> children to <u>produce</u> may be causing us to stop short of tapping their knowledge and comprehension. I believe that this may apply to middle-income children with their so-called verbal facades as well as to the relatively verbally limited low-income children.

In the final evaluations by the teachers there is strong support for the increased number of verbal work responses cited earlier in this report. On the other hand, there is a notable absence of the use of probes,

even an initial probe. As you will recall, there was a significant increase in the number of probes used in the post test situation, especially with the low-income children. One simple explanation is that the teachers understood the children's speech or gestures far better than did the Examiner.

I want to stress again the inadequacies of my attempts to tap the knowledge of the teachers. It may well be that if we are to obtain such data we must use audio-visual equipment and/or interview the teachers at frequent intervals. In addition, it may be in the end that the differences between the two situations, the testing situation and the nursery school setting are too marked for any reasonable comparison. One further factor must also be considered. Namely, that neither the nursery school program nor the particular teachers involved in the present study demanded that children attend to task demands in such a concentrated manner. It may be that our concerns for inter and intra individual and group differences tipped the scale in relation to attention to the low-income children and especially toward the boys who tended to refuse to work or were more action-oriented than word-oriented. I can only raise the question as to whether or not the teachers' good intentions denied these children opportunities to test out another style of response.

In more than one way and for a longer time than we asked of children, I have asked that you be task-oriented and attend to detail. Perhaps this will serve one very important purpose. It may cause you to think more about our tendency, I believe, to talk and talk and create situations producing cognitive indigestion (and its accompanying physical discomforts) for some children.

The implications of my study that I am willing to draw at this point are relatively few in number but pregnant with possibilities for further consideration and study.

In my estimation, the use of the Sigel tests in a reduced or condensed form very early in the child's attendance in nursery school offers a rich source of information for nursery school teachers. My reservation in a wholesale use of these instruments would be possible misuse of such data by adults who attempt merely to change very quickly the style of the child's response and strive for complete conformity among the children. On the other hand, I believe that if we are to accommodate the characteristic work style of individual children that our teaching style in turn must be varied. I can not support any attempt on the part of nursery school teachers to produce work responses to cognitive demands which overly emphasize verbal performances. While I would hope that David (a low-income child) would be able over time to use words rather than having to find brown crayon in the crayon box to match with the brown pipe, there is resourcefulness and ingenuity in his solution to the problem. I treasure this!

What is important to me in this example is that David was keenly observant and that he knew something that lead him to match the colors of the two test objects. I am concerned that the level of his performance may not be recognized by a teacher who may not be as responsive to non-verbal as to verbal behavior in children or who would assume, after watching his first non-work attempt, that he needed training in categorization. Fortunately, she might recognize that he doesn't need to "learn his colors."

While I may be revealing my prejudices, I believe that in general we as nursery school teachers tend to assume most of our children can ferret out our demands from our wordiness (verbal diarrhea) or from the minimum of cues we supply them through our gestures or sketchily stated suggestions.

For the low-income children in particular and especially for the boys in our groups, I believe that we have to pay more attention to their tendency to breakaway under pressure of attention and work. On the other hand, I am troubled by what I consider to be the compliance of the girls to task demands for certain cognitive processes. One may say that they are

not risk-takers and that our satisfaction with their work, especially when stated in verbal terms, reduces the likelihood that they will explore widely different ways of classifying objects or experimenting with matching a range of attributes of any one object.

In all honesty I can not close without mentioning the difficulties we produced for ourselves as teachers of young children as we became increasingly aware of inter- and intra individual and group similarities and differences among the children. There were many times when we were pushed by the middle-income children and pulled toward the lower-income children; times when we were successful in working with small combined groups as well as times when we worked with separated groups. There were periods of time when the gap between the two groups seemed greater than we could handle and again the rare periods when we congratulated ourselves for our ingenuity and resourcefulness. If we are willing to work harder than we have ever worked before - willing to examine almost everything we do with and for children - willing and able to work with the knowledge that we are not markedly skilled in translating or implementing well or skillfully what we know about children's learning into practice then we can begin to find more answers. I am convinced that we must not leave to chance or depend too heavily on our heretofore successful program planning or approaches to children if we are to stimulate and nurture further learning and understanding in the majority of lower-income children. We need, among other things, to examine carefully and critically the orderly sequencing of experiences for these children; our pace in conveying information and the attention we pay to details; and our ability to listen to their verbalizations and to see their non-verbal responses and questions - to be more mislead by their passivity, digressions, or erratic behaviors than we are by the verbal facades of many of our middle-income children.

Finally to conclude, I must come back to the second of my questions to you. What we want to know about developing further with children is not easily discovered if our goal is to find a relatively straightforward-simplistic styled approach. If nothing else, I hope that this somewhat abortive attempt to discover the relationship between children's behavioral responses to cognitive task demands will stimulate you to think more about our role in helping each individual child use his skills and knowledge in meeting the problems he encounters and those we pose for him in nursery school programs designed to encourage all aspects of the child's ability to learn how to learn about his complicated world.